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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/655,359	09/04/2003	Pere Josep Canti	60003503-2	1574
7590 08/30/2004 HEWLETT-PACKARD COMPANY Intellectual Property Administration P.O. Box 272400 Fort Collins, CO 80527-2400			EXAMINER NGUYEN, LAM S	
			ART UNIT 2853	PAPER NUMBER

DATE MAILED: 08/30/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/655,359

Applicant(s)

CANTI ET AL.

Examiner

LAM S NGUYEN

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 23 June 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 26-71 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 26-71 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 04 September 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### *Double Patenting*

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claims 26-27, 56-57 are rejected under the judicially created doctrine of double patenting over claim 1 of U. S. Patent No. 6641242.

Claims 28, 58 are rejected under the judicially created doctrine of double patenting over claim 2 of U. S. Patent No. 6641242.

Claims 29, 59 are rejected under the judicially created doctrine of double patenting over claim 3 of U. S. Patent No. 6641242.

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Claims 30, 60 are rejected under the judicially created doctrine of double patenting over claim 4 of U. S. Patent No. 6641242.

Claims 31, 61 are rejected under the judicially created doctrine of double patenting over claim 5 of U. S. Patent No. 6641242.

Claims 32, 62 are rejected under the judicially created doctrine of double patenting over claim 6 of U. S. Patent No. 6641242.

Claims 33, 63 are rejected under the judicially created doctrine of double patenting over claim 7 of U. S. Patent No. 6641242.

Claims 34, 64 are rejected under the judicially created doctrine of double patenting over claim 8 of U. S. Patent No. 6641242.

Claims 38 is rejected under the judicially created doctrine of double patenting over claim 16 of U. S. Patent No. 6641242.

Claim 39 is rejected under the judicially created doctrine of double patenting over claim 17 of U. S. Patent No. 6641242.

Claim 40 is rejected under the judicially created doctrine of double patenting over claim 18 of U. S. Patent No. 6641242.

Claim 41 is rejected under the judicially created doctrine of double patenting over claim 19 of U. S. Patent No. 6641242.

Claim 42 is rejected under the judicially created doctrine of double patenting over claim 21 of U. S. Patent No. 6641242.

Claims 43-44 are rejected under the judicially created doctrine of double patenting over claim 30 of U. S. Patent No. 6641242.

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Claim 45 is rejected under the judicially created doctrine of double patenting over claim 31 of U. S. Patent No. 6641242.

Claim 46 is rejected under the judicially created doctrine of double patenting over claim 32 of U. S. Patent No. 6641242.

Claim 47 is rejected under the judicially created doctrine of double patenting over claim 33 of U. S. Patent No. 6641242.

Claim 48 is rejected under the judicially created doctrine of double patenting over claim 34 of U. S. Patent No. 6641242.

Claim 52 is rejected under the judicially created doctrine of double patenting over claim 39 of U. S. Patent No. 6641242.

Claim 53 is rejected under the judicially created doctrine of double patenting over claim 40 of U. S. Patent No. 6641242.

Claim 54 is rejected under the judicially created doctrine of double patenting over claim 41 of U. S. Patent No. 6641242.

Claim 55 is rejected under the judicially created doctrine of double patenting over claim 42 of U. S. Patent No. 6641242.

Claim 68 is rejected under the judicially created doctrine of double patenting over claim 16 of U. S. Patent No. 6641242.

Claim 69 is rejected under the judicially created doctrine of double patenting over claim 17 of U. S. Patent No. 6641242.

Claim 70 is rejected under the judicially created doctrine of double patenting over claim 18 of U. S. Patent No. 6641242.

Claim 71 is rejected under the judicially created doctrine of double patenting over claim 19 of U. S. Patent No. 6641242.

Claims 35-36, 49-50, 65-66 are rejected under the judicially created doctrine of double patenting over claim 28 of U. S. Patent No. 6641242. The subject matter claimed in the claims is fully disclosed in the patent and is covered by the patent since the patent and the application are claiming common subject matter: "A computer readable storage medium" disclosed in the patented claim has the same functions as "an adaptive thermal print swath servo module" in the claimed invention.

The above claims, if allowed, would improperly extend the "right to exclude" already granted in the patent.

The subject matter claimed in the instant application is fully disclosed in the patent and is covered by the patent since the patent and the application are claiming common subject matter.

Furthermore, there is no apparent reason why applicant was prevented from presenting claims corresponding to those of the instant application during prosecution of the application which matured into a patent. See *In re Schneller*, 397 F.2d 350, 158 USPQ 210 (CCPA 1968). See also MPEP § 804.

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

1. Claims 26, 28, 30-36, 38-39, 41, 43, 45, 47-50, 52, 53, 55-56, 58, 60-66, 68-69, 71 are rejected under 35 U.S.C. 102(e) as being anticipated by Jones et al. (US 6601941).

**Referring to claims 26, 38, 43, 52, 56, 68:**

Jones et al. disclose a method of managing temperature in a printer, said method comprising the steps of:

preprocessing a file into a plurality of swaths and preprocessing each of swaths into a plurality of cells (*FIG. 6: "Divide swath into N equal size groups of print data". N groups are considered as N cells*);

calculating an estimated peak temperature for each printhead in printing each of said plurality of cells (*column 1, line 67 to column 2, line 3 and column 2, line 42-45: A peak temperature for printing a group (cell) is estimated based on analyzing drop counts in the group*); and

printing said swath in response to said estimated peak temperature for each printhead in printing, each of the cells being below a predetermined maximum temperature (*FIG. 6: "Printing without any shingling change" if  $T_{max}$  is less than or equal  $T_L$* ).

**Referring to claims 28, 45, 58, 69: further comprising:**

calculating an ink drop estimate for printing each cell (estimated density for the cell) and employing the ink drop estimate for printing each cell to calculate the estimated peak temperature for each printhead in printing each cell (*column 1, line 67 to column 2, line 3 and column 2, line 42-45: A peak temperature for printing a group is estimated based on analyzing drop counts in the group*).

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**Referring to claims 30-34, 41, 47-48, 55, 60-64, 71:** further comprising:

dividing a pass of each printhead in printing said swath into a number of sub passes or reducing number of ink drops in each sub-pass in response to said estimated peak temperature for any printhead in printing any of the cells being greater than said predetermined maximum temperature (*FIG. 7: "Estimating a plurality of maximum temperature of the print chip in printing the swath in a predetermined number of passes of the printhead, each of said maximum temperature being associated with a respective one of said groups"*), wherein a number of ink drops printed during each said sub-pass is substantially less than a number of ink drops printed during a pass, wherein printing a sub-pass in a height that is substantially similar to the printing pass, and wherein a recording medium is not advanced between each sub-pass of said number of sub-passes, (*FIG. 7: "If at least one of the maximum temperature exceeds a predetermined limit temperature, increase the predetermined number of passes of the printhead for printing the swath"*).

**Referring to claims 35, 49, 65:** A system for managing temperature in a printer, comprising:

a memory, at least one printhead (Abstract), and an adaptive thermal print swath servo ("ATPSS") module to preprocess a file stored in said memory into a plurality of swaths, wherein said ATPSS module is further configured to calculate an estimated peak temperature for each printhead in printing each cell and to print said swath with said printhead in response to said estimated peak temperature for each printhead in printing each cell being below a predetermined maximum temperature (*Abstract and FIG. 1: Memory 26, printhead 12, and microcontroller 24*).



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**Referring to claims 36, 39, 50, 53, 66:** wherein the ATPSS module is further configured to calculate an estimated ink drop density for each cell wherein the estimated ink drop density is utilized to calculate the estimated peak temperature (*column 1, line 67 to column 2, line 3 and column 2, line 42-45: A peak temperature for printing a group is estimated based on analyzing drop counts in the group (drop density of the group)*).

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 27, 29, 37, 40, 42, 44, 46, 51, 54, 57, 59, 67, 70 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jones et al. (US 6601941) in view of Kojima (US 5999204).

Jones et al. disclose the claimed invention as discussed above except the step of measuring the temperature of each printhead prior to printing said swath and employing said measured temperature as an initial temperature in calculating said estimated peak temperature for each printhead in printing a first cell of the swath, wherein the temperature of each printhead prior to and after printing each cell in the swath is measured by a temperature sensor (**Referring to claims 37, 51, 57, 67**), and wherein calculating the estimated peak temperature from a sum of a product or quotient of the estimated ink drop or density and a constant and an initial temperature of each printhead prior to printing each the cell (**Referring to claims 29, 40, 42, 46, 54, 59, 70**).

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Kojima disclose a method for controlling temperature in a printer. The method comprises the steps of measuring a temperature of each printhead prior to printing a region with thermistors (*FIG. 4: "Initial value of temperature"*), employing the measured temperature as an initial temperature in calculating an estimated peak temperature for each printhead in printing the region (*FIG. 4: "Calculate a predicted value of temperature for each region from the representative value of the image data within that region and an initial value of temperature as detected with thermistors"*), wherein the estimated temperature for each region is calculated by summing or adding the representative value for the image data within that region (considered as a product or quotient of the density and a proportionality constant  $k$ ) and the initial value of temperature (*column 7, line 44-48 and column 9, line 50 to column 10, line 13*).

Therefore, it would have been obvious for one having ordinary skill in the art at the time the invention was made to modify the method for controlling the temperature in the printer disclosed by Jones et al. such as measuring the temperature of each printhead prior to printing a swath and employing the measured temperature as an initial temperature in calculating an estimated peak temperature for each printhead in printing a first cell of the swath as disclosed by Kojima. The motivation of doing so is to perform temperature compensation on the image data of pixels in order to produce records without uneven image densities and to form recorded images of high quality at high speed as taught by Kojima (*column 3, line 49-53*).

### ***Response to Arguments***

Applicant's arguments filed 08/12/2004 have been fully considered but they are not persuasive.

On page 25, the applicants argued that Jones et al. do not disclose “calculating an estimated peak temperature for each printhead in printing each of plurality of cells”. As cited in the previous office action and repeated above, Jones et al. teach that predicting or estimating a temperature of the print head before printing can be done based on a number of ink drops to be emitted. Moreover, Jones et al. suggest dividing a swath into plurality of groups (cells) and counting number of ink drops per group in order to improve the accuracy of maximum temperature prediction. Therefore, by following the above teaching and suggestion, one can estimate the peak temperature of the printhead in printing each group (cell). In addition, on page 26, the applicants argued that Jones et al. do not teach or describe division of a swath into cells, such as cells of four inches in length. However, as based on the claim language, the claims do not define how a swath is divided into plurality of cells. Thus, the swath, as being broadly interpreted, can be divided either based on its length, its height, or in time period to print the whole swath. As a result, Jones et al.’s suggestion to divide the swath into plurality of groups reads on the claim language of the claimed invention.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to LAM S NGUYEN whose telephone number is (571)272-2151. The examiner can normally be reached on 7:00AM - 3:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner’s supervisor, STEPHEN D MEIER can be reached on (571)272-2149. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

LN

March 18, 2004



**HAI PHAM**  
**PRIMARY EXAMINER**